

Chapter 500

Structures - 09

ITEM 502, PILING

Acceptable welding rods for splicing H piles and pipe piles are E7016 and E7018. These identifying numbers will be found on the electrodes and on their container. Welding is usually performed at the project construction site.

There is a standard special revision to Section 502 of the Standard Specifications, for Piling, requiring the use of a Pile Driving Analyzer (PDA) when piling is to be driven on a project.

ITEM 506, GABIONS AND SLOPE MATTRESS

Gabions

A necessary feature of the rock basket is the weave of the wire fabric, which must "give" in all directions and not unravel if a wire should break. Field personnel will inspect for compliance with the Non-Raveling Construction requirement in Subsection 712.09 of the Standard Specifications.

ITEM 509, STRUCTURAL STEEL

Fabrication

The Staff Bridge Fabrication Inspectors are responsible for the testing, inspection, and documentation of shop fabricated structural steel bridges. They will obtain and review mill test reports, welding procedure reports, and welder qualifications, and assure compliance with project specifications. This will be documented on the final inspection report issued for shop fabricated structural steel bridges.

Field Welding

If any field welding of fabricated structural steel components becomes necessary, the Bridge Design Inspection Unit should be consulted for guidance and assistance. They will also provide guidance in determining defective welds that are not detectable by visual inspection.

Shear Studs

Shear studs are usually inspected during the shop fabrication of structural steel bridges.

Field welded shear studs are inspected by striking the stud with a hammer until it is bent to 45°. Two studs per 100 will be tested. The studs tested that show no sign of failure should be left in the bent position. Studs bent during handling should be left in the bent position. Any studs that are broken off should be replaced by field welding. Additional studs should be tested when a failure occurs. Contact the Staff Bridge Fabrication Inspectors for assistance when excessive failures occur.

Bolts

Rotational capacity tests are required at the job site. Refer to the CDOT Construction Manual. Document the results of this test in Project Files.

ITEM 509, STRUCTURAL STEEL (GALVANIZED) - MISCELLANEOUS

Field inspection in some cases cannot be accomplished on a piece-by-piece basis, as it arrives on the project, depending on the size and configuration of the material. Therefore, it is possible for field personnel, during installation to find places that are not adequately galvanized. It is allowable to touch up inadequate or damaged galvanizing with one full brush coat of zinc rich paint meeting the requirements of the Department of Defense DOD-P-21035A, according to 509.27(h) of the Standard Specifications. A Certificate of Compliance is required indicating that the zinc rich paint meets the above specification.

ITEM 510, STRUCTURAL PLATE STRUCTURES (GALVANIZED)

Not pre-tested, but field inspected. A word of caution regarding the storage of galvanized structural plate. Zinc will convert into "white rust" rapidly when it becomes wet in the absence of air.

A rapid loss of zinc may occur when curved sheets are stacked together in such a way that water can get between the sheets and not drain. It is possible to lose the entire protective coating of zinc over large areas in a short period of time under the right conditions of moisture and warmth. To prevent this, the sheets should be stored under cover or stacked so water will drain away rather than be trapped between the sheets.

ITEM 515, WATERPROOFING MEMBRANE

Bridge Deck, All Types

Section 515 of the CDOT's Standard Specifications describe the types of waterproofing membranes which may be used as protection from de-icing salt on concrete bridge decks. In addition, the Standard Specification gives detailed application procedures for membrane types, the protective covering, and hot mix asphalt overlay. These requirements must be strictly adhered to in order to obtain the best possible waterproofing system.

COLORADO DEPARTMENT OF TRANSPORTATION FIELD REPORT FOR SAMPLE IDENTIFICATION OR MATERIALS DOCUMENTATION Metric units <input type="checkbox"/> yes <input checked="" type="checkbox"/> no				Field sheet No. 120227		Date 4/4/02	
				Project No. IM0253-151		Project location I-25, SH 7 to WCR 16	
Project code (SA#) 11925		Function 3200		Region 4		Part. P	
Sample submitted: <small>(ie.: Soil, ABC, Hydrated lime, HMA, concrete cores, steel, etc.)</small> Rip-Rap				Field office phone number 303-828-0386		Field office FAX number 303-828-0430	
Item 506		Class		Grading		Special provisions applicable: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Previously used on Project No.:			Previous CDOT Form #157 F/S No.(s):		<input checked="" type="checkbox"/> CDOT Form #633 (sack) <input type="checkbox"/> CDOT Form #634 (can)		
<ul style="list-style-type: none"> ● Sample Identification: Quantity & Unit of material submitted, describe tests required, precise location sample removed from (stationing), etc. ● Materials Documentation: Field inspected (describe appearance, weight/dimensions, model/serial number), COC &/or CTR provided, etc. 							
<p>Submitting One (1) sack of Rip-Rap to Geocal main lab</p> <p>to perform specific gravity test as per CDOT Field</p> <p>Materials Manual. The Rip-Rap for 6", 9", 12" and 18"</p> <p>are all provided from the same source listed below. One</p> <p>specific gravity test will cover all sizes as per head tester.</p>							
APL/QML Acceptance: APL Ref. No.		Product name:			Date checked:		
APL/QML Acceptance: APL Ref. No.		Product name:			Date checked:		
Preliminary <input type="checkbox"/>		Construction <input checked="" type="checkbox"/>		Maintenance <input type="checkbox"/>		Emergency <input type="checkbox"/>	
					Date needed ASAP		
Contractor Kraemer and Sons				Supplier Cat Construction			
Sampled from <small>(Pit, roadway, windrow, stock, etc.)</small> Stockpile				Pit name or owner Spec-Agg. Pit			
Quantity represented 1/source/project		Previous quantity 1/source/project		Total quantity to date			
Sample submitted: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Shipped to: <input type="checkbox"/> Central lab <input checked="" type="checkbox"/> Region lab		Via Geocal		Date 4/4/02	
Sampled or inspected by (Name) D. Buck			(Title) Q.A. Tech		Lab phone number 303-828-2644		
Supervisor <small>(Pro./Res./Matis. Engr./Maint. Supt.)</small> Corey Stewart			Title P.E. I		Address 1050 Lee Hill Rd. Boulder, Co. 80302		
Distribution: White copy - Staff Materials Branch <small>(submit white copy only if sample or information is directed to Staff Materials)</small> Canary copy - Region Materials Engineer Pink copy - Resident Engineer				CDOT Form #157 9/07 Previous editions may be used until supplies are exhausted			

CDOT Form # 157

Note: Within Date needed, ASAP is not a date.

COLORADO DEPARTMENT OF TRANSPORTATION FIELD REPORT FOR SAMPLE IDENTIFICATION OR MATERIALS DOCUMENTATION Metric units <input type="checkbox"/> yes <input checked="" type="checkbox"/> no				Field sheet No. 120227		Date 9/8/03	
				Project No. IM0253-151		Project location I-25, SH 7 to WCR 16	
Project code (SA#) 11925		Function 3200		Region 4		Part. P	

Sample submitted: <small>(ie.: Soil, ABC, Hydrated lime, HMA, concrete cores, steel, etc.)</small>			Field office phone number 303-828-0386		
Gabions			Field office FAX number 303-828-0430		
Item 506	Class	Grading	Special provisions applicable: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		
Previously used on Project No.:		Previous CDOT Form #157 F/S No.(s):		<input type="checkbox"/> CDOT Form #633 (sack) <input type="checkbox"/> CDOT Form #634 (can)	
<ul style="list-style-type: none"> ● Sample Identification: Quantity & Unit of material submitted, describe tests required, precise location sample removed from (stationing), etc. ● Materials Documentation: Field inspected (describe appearance, weight/dimensions, model/serial number), COC &/or CTR provided, etc. 					
This material has been field inspected and accepted.					
The material meets the requirements of 712.09. The Gabions conform					
with the dimensions shown on the Plans and Special Provisions.					
APL/QML Acceptance: APL Ref. No.		Product name:		Date checked:	
APL/QML Acceptance: APL Ref. No.		Product name:		Date checked:	
Preliminary <input type="checkbox"/>		Construction <input checked="" type="checkbox"/>		Maintenance <input type="checkbox"/>	
Emergency <input type="checkbox"/>		Date needed			
Contractor Kraemer and Sons			Supplier Rocky Mtn. Gabion Company		
Sampled from <small>(Fill, roadway, windrow, stock, etc.)</small>			Pit name or owner		
Quantity represented 350 Cu. Yd.		Previous quantity 0		Total quantity to date 350 Cu. Yd.	
Sample submitted: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Shipped to: <input type="checkbox"/> Central lab <input type="checkbox"/> Region lab		Via	
Date 9/8/03		Sampled or inspected by (Name) Mark Stadig		(Title) E/PS Tech III	
Lab phone number 303-828-2644		Supervisor <small>(Pro./Res./Matis. Engr./Maint. Supt.)</small> Corey Stewart		Title P.E. I	
Address 1050 Lee Hill Rd.		City/State/Zip Boulder, Co. 80302			

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